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TITLE: Method, apparatus, and system for selection of a port for data exchange

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Assignee Name - ASNM (1):
Palm, Inc.

Assignee Group - ASGP (1):
Palm, Inc. Santa Clara CA 02

Detailed Description Text - DETX (8):
The portable computer can be a **Palm** IIIx.TM. connected organizer that has an IrCOMM capable infrared communications port as the preferred port, and a "HotSync" data exchange application. If the user sets the preferred port to the infrared communication port, the user can still initiate "HotSync" operations by pressing hardware buttons on physical accessories connected to the **Palm** IIIx. The physical accessories can be modems and communication cradles. The button presses will not change the port preference because the request signal provided by the button includes information that the portable computer can match with the type of physical accessory from which the signal came, and consequently override the port preference. The matching of the signal with the physical accessory type is described in United States patent application serial number 09/299,063, entitled "Detection of an Accessory Device Connected to a Portable Computer," filed Apr. 23, 1999still pending, and having inventors Eric M. Lunsford, Steven C. Lemke, Neal A. Osborn, and Francis J. Canova, Jr. which is incorporated herein by reference.

Detailed Description Text - DETX (14):
Some embodiments of the portable computer 100 include a **palm**-sized connected organizer having enhanced-infrared communications capability such as the **Palm** IIIx.TM. from 3Com, **Palm** Computing. The portable computer can have one or more connection ports 110A and one or more wireless ports 110B.

Detailed Description Text - DETX (19):
The processor 120 can be a personal systems embedded processor such as a DragonBall.TM.-EZ (MC68EZ328). The memory 130 can be the primary memory of the

portable computer 100, and for connected organizers typically has a storage capacity in range of approximately 1 megabyte to approximately 8 megabytes. The connected organizers available from **Palm** Computing, Inc. include the **Palm** III.TM., which has 2 megabytes of memory storage capacity, and the **Palm** IIIx, which has 4 megabytes. However, the processor type and memory size are not particularly important. All that is needed is processing circuitry and storage circuitry sufficient to perform the data exchange functions.

Detailed Description Text - DETX (21):

The "HotSync" application 134 is included in various embodiments of the invention, specifically the **Palm** IIIx and other portable computers from **Palm** Computing. More generally, the invention is operable in conjunction with any program that provides for data exchange between the portable computer 100 and one or more external data sources 190.

Detailed Description Text - DETX (22):

The HWSerialManager program 135 is also provided in various embodiments of the invention, specifically the **Palm** IIIx and other portable computers from **Palm** Computing. More generally, the invention is operable in conjunction with any program that provides the user with the ability to select a preferred port for data exchange using software. The data exchange port preference 136 program typically provides an input field displayed in user graphics 138. The user graphics 138 include a pop-up list for the data exchange port preference 136 selection. The data exchange port preference 136 selection graphics can be displayed by the HWSerialManager program 135, or by the corresponding data exchange program. The user graphics 138 provided by the HWSerialManager program 135 are described in the Graphic User Interfaces section below.

Detailed Description Text - DETX (23):

The image screen 140 is typically a touch-sensitive liquid crystal diode (LCD) screen such as those provided on the **Palm** III and the **Palm** IIIx.

Detailed Description Text - DETX (24):

The physical accessory 180 can be a modem, a docking port cradle, or any other accessory capable of providing a signal to the port including an indication of the type of accessory. The "HotSync" button 185 is provided on physical accessories 180 adapted to exchange data with connected organizers from **Palm** Computing. More generally, the invention is operable with physical accessories that provide an indication of the physical accessory type to the portable computer. Typically, the indication of physical accessory 180 type is provided with a request for data exchange.

Detailed Description Text - DETX (25):

The signal can be generated by a variety of input mechanisms. Preferably, to enhance the user experience by minimizing the number of user actions needed to initiate an exchange of data, the signal is generated by a single interaction with an input mechanism disposed on the physical accessory 180. The single interaction can include a specified movement for a push-activated

switch, a rotation actuated switch, a slide activated switch, or any other activation mechanism. In some embodiments, the single interaction can include placing the connection port 110A in physical contact with the physical accessory 180, for example by dropping the **Palm** IIIx into a communications cradle.

Detailed Description Text - DETX (27):
The portable computer 100 provides users with a clear selection for specifying which of the communications ports will be used for exchanging data with a graphic user interface (GUI) displayed on the image screen 140. The data exchange application can be used to select the port. For portable computers from 3Com, **Palm** Computing, the "HotSync" application displays the port selection GUI. A user can select the port by tapping the touch-sensitive screen on the GUI corresponding to the desired port. In some embodiments, the user can select the desired port by entering input via a keyboard or keypad.

Detailed Description Text - DETX (34):
Various embodiments of the invention enable the user to accomplish either a modem data exchange, or a communication cradle data exchange, after an infrared preference has been set in the port manager program or other application program interface (API). The modem or communication cradle data exchange occurs automatically, without the user having to reset the preference each time the user attempts to exchange data using a communication port different than the preferred port. In some embodiments, such as the **Palm** IIIx, the program for setting the port preference is a hardware serial manager, such as the HWSerialManager program 135 shown in FIG. 1.

Detailed Description Text - DETX (37):
The key advantage of this scheme for the **Palm** IIIx is that if the user is going to use the IR port for data exchange, then once the user sets the preference to IR the preference can be left alone. The user only has to do a one-button push to accomplish synchronization using the IR port, or over the other alternative connection ports that have analog voltages listed in the look up table. The user does not have to reconfigure the port preference to accomplish this. Only a single button press is required from power-on to synchronization. This advantage is available for any portable computer 100 that includes the appropriate elements as described herein.

Detailed Description Text - DETX (42):
The data exchange can include synchronization of data stored in a file in the portable computer 100 with data stored in a file disposed in an external data source 190, such as performed by a "HotSync" operation for a **Palm** III computer. The synchronization can include reconciling and updating of the file data. The file data can include at least one of address list file items and calendar file items.

Detailed Description Text - DETX (55):
For some embodiments of the invention, interacting with a data exchange

initiation mechanism on the physical accessory 180 sends a request for data exchange to the portable computer 100. For the **Palm** III, pressing the "HotSync" hardware button 185 disposed on the physical accessory 180 used to initiate a "HotSync" sends a "HotSync" initiation signal to the **Palm** III. The **Palm** III processor 120 receives the "HotSync" initiation signal. Receiving the "HotSync" initiation signal wakes the processor 120, and starts the "HotSync" application 134 disposed in the **Palm** III memory.

Detailed Description Text - DETX (58):

Other embodiments of the invention provide a method to accommodate the developments associated with radio frequency (RF) communications preformed according to protocols provided by the Bluetooth consortium. For example, such RF communications can be performed in the 2.4 GHz Industrial-Scientific-Medical (ISM) band, and use frequency hopping spread spectrum (FHSS) techniques. For some of the embodiments, the **object exchange (OBEX) upper layer protocol** is used to implement the wireless communications capability.

Detailed Description Text - DETX (73):

FIG. 3B shows that once the **Palm** III is placed in the communications cradle and the "HotSync" hardware button 185 is pushed, the portable computer 100 automatically switches from the direct IR preference shown in FIG. 3A and performs a "HotSync" operation through the communications cradle.

Detailed Description Text - DETX (75):

FIG. 3D shows that a tapping of the "HotSync" Software initiation button 316 on the image screen 140 causes the "HotSync" operation to proceed using the IR port on the **Palm** IIIx.